#### Appendix C

# The User Survey and Sampling Procedures<sup>1</sup>

This section is devoted to a description of the sampling procedures used in a survey of Chesapeake Beach Use conducted in 1984. Unlike the data used in analyses of boating and fishing in Chapters 5 and 6, the data used in this chapter were collected during an earlier budget period of this cooperative agreement. Great care was taken with the sampling frame to improve confidence in the results. Because the survey itself isimportant to the project, we describe the content and procedures extensively. Copies of the survey instruments can be found in Appendix C.

From May 26, 1984 to August 19, 1984, Research Triangle Institute (RTI) interviewed individual on the western shore beaches in Maryland. The study population consisted of all residents of the Baltimore and Washington, D. C., SMSA's, age 14 or older, that used these beaches for recreation in 1984. More specifically, the population was limited to recreational users of the following 12 beaches:

		Strata	
	<u>Beach</u>	<u>Geographic</u>	Size
1,	sandy Point	north.	large
2.	Point Lookout	south	large
3.	Fort Smallwood	north	small
4.	Miami	north	small
5.	Rocky Point	north	small
6.	Elm's Beach	south	small
7.	Bay Ridge	south	large
8.	Kurtz	north	small
9.	Breezy Point	south	small
10.	Rod & Reel	south	small
11.	Morgantown	south	ml 1
12.	North Beech	south	Oman

Four hundred and eight individuals were interviewed at the beach to learn of their recreational patterns and perception of water quality at these beaches. These individual were randomly selected from sample beaches and days. The sampling design can be described as a two-stage stratified sample in which a probability sample of beaches and days was selected, and a random systematic sample of persons was interviewed at each sample site (day-beach combination).

i The discussion of the sample is composed of selected excerpts from Devore, McDonald, Myers and Williams, Chesapeake Bay Beach Use Survey, Research Triangle Institute, 1984.

A sample of at least 300 completed interviews was intended so that relative sampling errors would be approximately 11 percent or less for estimating proportions of .30 or larger. This assumes that a design effect of approximately 1.5 might result because of clustering (a beach-day unit constitutes a cluster of individuals) and unequal. weighting. Aself-weighting sample was sought but difficult to obtain because of errors in size measures (projected number of users for a beach-day unit).

The number of sample primary sampling units (PSU) was based on the requirement to obtain at least 300 completed interview. such that each PS U would involve approximately one-half day of interviewing for a two-person team. To match this design, each PSU was randomly designated a. a morning or afternoon interview period, beginning at 1000 and 1300 hours, respectively. Hence, an average of eight or nine completed interview. was expected for each of the 36 PSU's (see Table 4.1 for sample allocation).

#### Stratification and Sample Selection

Primary sampling unit. (PSU's) consisted of beach-day units (1,204 PSU's = 66 days x 14 locations). The 14 locations consisted of 11 beaches plus three beach locations at Sandy Point — partititioned into three segments because of its relatively large size and usage. Beaches were stratified into north (Sand y Point and beaches north) and couth (the prior listing of beaches indicates the stratification). The beaches wore further stratified by size (expected weekly usage). Large is defined as greater than 7,000 visitors per week in north beaches and greater than 3,000 in the south beaches. Additionally, days were stratified into weekdays, Saturdays, and Sundays (and holidays). The strata, their population and sample PSU counts are indicated in Table C1.

Table C. 1
Population Counts and PSU Allocation by Stratum<sup>s</sup>

	Visit	ors Ma	d Number of y 26 to 1964 (tho			) Allo	<b>PSU's (bea</b> ocated to	
	Sat	Sun	Weekday	Total	Sat	Sun	Weekday	Total
North/large North/small south/large South/small	77 6 7 37 <u>20</u>	110 6 4 43 24	106 <b>94</b> <b>44</b> 17	293 243 124 61	3 3a 2 <sub>2</sub>	5 <sub>4</sub> <sup>2</sup> 2 2	5 4 2 <sup>2</sup> 2	13 13 6 6
Totals	201	261	259	721	10	13	13	36

Population counts are based on cite interviews prior to the survey, and PSU allocation is proportional to number of visitors with the *constraint* that greater or equal to two per cell are selected.

One fewer resulted in these cells because of random subsampling needed in the latter part of the survey period. (A slightly larger number of interviews than expected were obtained early in the survey.)

The selection of PSU's within strata involved equal probability y for days and probability proportional to size (expected number of visitors) for beaches. Within selected PSU's, individual were selected on site with equal probabilities. Approximately eight or nine interviews were needed from each PSU. The procedure used to satisfy this objective was for the interviewers to estimate the number of beach users just prior to starting time for interviewing. By comparing this estimated count to a table prepared specifically for this survey, the interviewers obtained a sampling interval and a random starting point. By using the interval and starting point in a pro-designated pattern for the entire site, a valid systematic sample of users was obtained.

#### Sampling Weights

Whenever observation units (in this case the individual users) enter the sample with different probabilities, weights must be used with the observation to obtain unbiased estimates for the study population. Because of the complexities in an intercept-type survey, selection probabilities are often not known. In the present survey, however, PSU selection probabilities are known, and final-stage selection of individual can be reasonably estimated (even though a systematic sample of visitors at the site is taken), their chance of selection will vary with the amount of time spent at the beach during the sample day as well as number of visits to this and other study beaches during the survey period. A sampling weight for the jth individual is calculated as follows:

$$W_{i,j} = p_i^{-1}p_i^{-1}f_{i,j}f_{i,j}$$

where

- P<sub>i</sub> = location probability" (expected number of hits) for PSU (i);
- d = the number of daya during the survey period for the particular type of day being sampled (d = 13 for Saturdays, for example);
- n = number of PSU's being selected for the stratum (12 strata);
- s, size measure for PSU (i) = the expected number of visitors for that type of day  $(S_{+} = \mathbf{ES}_{+})$ ;
- $P_i$  j = sampling rate of users within sample PSU (i); and

f, j

and = factors to adjust for number of hours user spent at the beach on the sample day and number of trips to the study beaches during the summer, respectively.

Note that  $f_{ij}$  and  $f_{ij}$  are based in part on intentions. In **fact**,  $\mathbf{f}_i$  j is particularly uncertain if the interview is being conducted early in the season. To verify the accuracy of these intentions both to obtain selection multiplicity and to estimate related statistics, intention-based questions were verified by telephone at the end of the season for interviews taken early in the survey.

#### Screening and Confirmation

A screening form waa designed to identify as eligible respondents only those people living in certain counties of Virginia or Maryland, or Washington, Do C. In addition, the screening process ruled out as ineligible any person who was under 14 years of age; however, if the selected sample individual was over 14 but less than 18 years of age and in the company of someone he/she lived with who was over 18 years of age, the interviewer deferred to the older individual.

The User Intercept Survey Questionnaire was designed to record and collect the following:

- Frequency of visits made to beaches on the western shore of the Chesapeake
- . Activities that the respondent (and his/her family) participated in when visiting beaches
- Activities not participated in and the reason why they were not
- Coat related to a typical trip to each beach that the respondent had visited since January 1, 1984
- . The respondent's perception of the quality of the beach and the beach facilities •t each beach with which he/she was familiar
- Factors that influence a respondent's decision to visit or not visit a beach
- The respondent's willingness to continue to viait the sample site if coots related to the use of the beach were to rise.

In addition, a series of demographic questions to enable analysts to establish profiles of beach users were also included in the questionnaire.

A Confirmation/Intention Contact sheet (used in conjunction with a Record of Calls sheet) was developed not only to confirm the number of visits to sample beaches reported in the Intercept Survey Questionnaire, but also to ascertain the number of visits the respondents intended to make at any sample beach for the rest of 1984. The confirmation/intention contacts were only made with those respondents who had provided adequate information to contact them by telephone.

#### Data Collection Procedures

The data collection schedule originally called for a total of 36 visits to the 12 sample beaches, with an expected yield of 300 or more completed interviews. This schedule was later revised and the subsequent number of total visits wae reduced. Table C.2 shows the original data collection schedule. Those sampling days which were eliminated have been denoted by an asterisk. The resulting number of visits are summarized as follows (AM indicates interviewing beginning in the morning at 10 o'clock, and PM indicates interviewing beginning at 1 o'clock in the afternoon):

Beach <b>Numb</b> er	Beech Name	AM Visits	PM Vimits	Total Visits
1	Sandy Point	5	6	11
2	Point Lookout	1	1	2
3	Fort Smallwood	1	0	1
4	Miami	0	3	3
6	Elms	0	0	0
7	Bay Ridge	0	3	3
8	Kurtz Pleasure Beach	0	1	1
9	Breezy Point	0	1	1
10	Rod and Reel Dock	1	0	1
11	Morgantown	1	1	2
12	North Beach	1	0	1
	TOTALS	12	18	30

For the User Intercept Survey, each field interviewer was given a of the names, addresses, and ID numbers for each PSU (beach) in the assignment, along with area maps with the beaches marked. In addition, each interviewer was given a sketch of each beach. Other materials included were the table. to determine sampling rates and listing forms for counting and selecting sample individuals. The interviewers always worked as a team, splitting up only to interview eligible respondents.

The field interviewers were asked to review their materials and determine the moat efficient route of travel to reach each beach. Upon arrival at a beach, they had first to check that they had correctly identified and located the precise boundaries of the area. Once this was verified, the interviewers estimated the number of sample individual on the beach, spending no more than 30 minutes in doing ao. When the estimate was determined, they looked up that number in the table of sampling intervals. Marking the estimate and sampling interval at the top of the listing form, they next consulted their list of random numbers to determine the number of the first person to be interviewed and marked that in the space provided on the They circled the number of the randomly selected start person, listing form. counted the proper interval, and circled the last interval number as the next selected person. This activity continued until they had gone through the entire list interviewing the selected individuals.

Table C.2
Chesapeake Bay Beach Use Study Data Collection Schedule

Date	Beach Name	Beach <b>Number</b>	Sample Time	Date	Beach Name	Beach Number	Sample Time
May 26 27 28 29	Pt. Lookout Morgantown Miami Miami	2 11 4 4	1300 1000 1300 1300	July 8 9 10 11	Kurtz	8	1300
30 31		_	1300	12 13	<b>Bay</b> Ridge	7	1300
June 1				14 15	Rocky Pt.	5	1300
2 3 4	Sandy Pt. (NofS)	1	1000	16 17 <b>18</b> <b>19</b>	Miami	4	1300
5 6 7 8 9 10 11 12 13				20 21 22 23 24 25 26 27	sandy Pt. (SofS) sandy Pt. (SofS) Rod & Reel		1300 1300 1000
14 15 16 17 18	Sandy Pt. (Nofs) Morgantowm Sandy Pt. (Nofs) Bay Ridge	11	1000 1300 1300 1300	28 29 30 31	North Beach Sandy Pt. (Sofs)	12 1	1000* 1300
19 20	Sandy Pt. (Nofs)	1	1300	<b>Aug</b> 1 2	Pt. Lookout	2	1000*
21 22 23 24	Rocky Pt. North Beach Sandy Pt. (E)	5 12 1 5	1000 1000 1000 1300	3 4 5 6	Bay Ridge Ft. <b>Smallwood</b>	7 3	1300 1000*
25 26 27 28	Rocky Pt.	3	1300	7 8 9 10	Rocky Pt.	5	1000
29 30	Breezy Pt.	9	1300	<b>11</b> 12	<b>Kurtz</b> Pt. Lookout	8 2	1300* 1000
July 1	sandy Pt. (Sofs)	1.	1000	13 <b>14</b>	Sandy Pt. (E)	1	1300*
2 3 4	Sandy Pt. (E)	1	1300	15 16 17	sandy Pt. (Sofs)	1	1000
5 6 7				18 19	Sandy Pt. (Nofs)	1	1000*

<sup>\*</sup>Originally scheduled but subsequently eliminated.

# Appendix D

User Survey instrument

#### 

# SCREENING FORM

I.	ASSIC	GNMENT INFORMATION:
	CASE	ID #: Date: Month Date (1-4) Time: (5-8)
	SITE	#: Meather: s 1 PC 2 C 3 R 4
		VIEWER NAME (9)
II.	INTRO	DDUCTION:
	•	Hello, my name is  Researchers at the Univer-
and would	t <b>hey</b> l like	Maryland are currently studying citizens' use of the <b>Chesapeake Bay</b> are looking for certain types of people to answer questionnaire. I be to $\bullet$ sk you 4 questions to determine if you $\bullet$ re the type of person pking for. First
III.	<u>ELIG</u>	IBILITY: (20)
	Α.	Do you currently live in Maryland, [1] (Go to B)
		Virginia,
		Washington, <b>D.C,</b> or
		Some other place?
	В.	What county do you live in? (ENTER, COMPARE AND CODE)
		MARYLAND  (Anne Arundel, Baltimore including city, Carroll, Charles, Harford, Howard, Montgomery, Prince George's)
		Prince William)
		SOME COUNTY NOT LISTED
	c .	How old ●re you?  (12)  Logg than 1/4 wasse of ago
		Less than 14 years of age
		Over 14, but less than 18 years of age
	<b>D</b>	18 years of age or older
	D.	Did you cone herewith other people including someone you live with who is 18 years of • ge or older?
		<pre>other people but none you live with who is 18 years of age or older?</pre> (Go to G)
		by your self?
	E.	I would like to talk to the person you live with who as 18 years of age or older and is here with you today. Point that person out to me or tell me how and where to find him or her. (WHEN YOU LOCATE THE PERSON, DETERMINE ELIGIBILITY BY VERIFYING OR REASKING ANY OR ALL OF THE QUESTIONS IN PART III. BEFORE YOU BEGIN THE QUESTIONS READ THE INTRODUCTION TO THE NEW PERSON.)

F.	(CODE 2 or 3 IN NBELOW AND SAY:)	
	You (do not live in the area/below to survey on this study. Will you number in case my supervisor wants	u give me your name •nd teleph
	NAME_	TELEPHONE ( )
G.	(CODE 1 IN IV BELOW AND SAY:)	
	You are the type of person we questions will take 15 to 20 m MEETING OBJECTIONS SAY:) Before I a record of the people I speak to telephone number? What time did will you leave?	<pre>inutes. Can we start now? (A ask the questions I need to k . What is your name, address,</pre>
	NAME	TELEPHONE ( )
	ADDRESS_	TIME ENTERED BEACH:
		TIME LEAVING BEACH: (14-1)
REC	ORD <b>OF</b> ELIGIBILITY (Screening <b>Statu</b>	
	-	INTERVIEW AND/OR COMPLETE PART
		INTERVIEW AND/OR COMPLETE TAKE
		(STOP. DO NOT INTERVIEW. RE
		STATEMENT FROM III F, RECORD INFORMATION AND TERMINATE CONTA
	Refused Screening 97	
	<u> </u>	(RECORD DETAILS
	Other (Specify)	IN NOTES SECTION BELOW)
	Other (Specify)	(22-2
		(22.2
REC	ORD OF INTERVIEW STATUS	
	Completed	(EDIT CASE AND SHIP TO RTI)
	Partial/Breakoff 02	(RECORD DETAILS IN NOTES
	Refused	SECTION BELOW)
	Language Barrier 04	
	Other:(Specify)	(24-2
NOTE	3 :	<b>COLS.</b> 26-72 = blank
<u>NOTE</u>	<u>s_</u> :	<b>COLS.</b> 26-72 <b>a</b> blank <b>COLS.</b> 73-80 <b>a</b> SITE/
NOTE	<u>s_</u> :	
NOTE	<u>3_</u> :	
NOTE	<u>3_</u> :	

#### CHESAPEAKE BAY BEACH USE SURVEY

# Conducted by Research Triangle Institute for the University of Maryland

MOTICE - Information contained on this form that would permit identification of any individual has been collected with a guarantee that it will be held in strict confidence and used only by persons engaged in or for purposes of this survey. All results will be summarized for groups of people and no information about individuals will be released. IDENTIFICATION SITE NO. CASE ID Field Interviewer Name Date Interview Completed Month INTRODUCTION As I said ■ arlier, researchers • t the University of Maryland • re currently studying citizens' use of the Chesapeake Bay. I will • sk you some questions regarding your recreational use of the Chesapeake Bay, parti cularly  $\bullet$ t the beaches. I  $\bullet$ lso have to  $\bullet$ sk some questions which will  $\bullet$ nable the researchers to establish profiles of typical users of the Bay. There is no direct benefit from taking part in this study  $\bullet$  nd you have the right to refuse to  $\bullet$  nswer  $\bullet$  ny or  $\bullet$ 11 of the questions or discontinue your participation  $\bullet$ t  $\bullet$ ny time. The information **that you** provide will be combined with that provided **by** other people who participate in the survey to •ssure complete confidentiality •nd your name will not be released or revealed to anyone other than ●uthorized project staff. It may be necessary to recontact you later to verify the number of times you visited beaches during the season. The results of this survey may be helpful in • ffectively • llocating money to cleaning up the Bay. <u>c</u>. BEACH UTILIZATION 1, How many of the **following** types of people ●re in your party today? Adults (age 18 ● ad older). . . . . . . (5-6)Children under age 14 . . . . . . . . . . . . Are you at the beach today with your family? By family I mean people who •re related to you by blood, marriage, or adoption, •nd who live with

(7)

Yes . . . . . . . . . . . 2

3.	Bay.	LE SITE NAME] is situated on the Western Shore of the Chesapea.  Since January 1, 1983, have you (and members of your family with you) (READ THE FOLLOWING)	ke ho
	a.	Visited beaches on the Eastern shore of the Chesapeake, for example, shores close to Cambridge, Salisbury, or Easton? . ,	
	b.	Visited beaches on the ocean, such as Ocean City?	
	С.	gone swimming from • boat in the Chesapeake?	
	d.	gone swimming in public or private swimming pools?	

THIS SPACE INTENTIONALLY BLANK

4.	When you visit a Western pate in (READ THE FOLLOWI)	Shore beach such as this IG)	000, do you (and membe	ers of your family who li	ive with You) parti
	ACTIVITY	NO (Next activity or question)	YES (Aok Q.s 4A & 4B.)	A. Howevery adults participate in (ACTIVITY)	48. How many childre & teenagers part cipate in (ACTIV)
۵.	svimming or wading?	🗅	2 . (12)		(15-16)
b.	hooch ● ctivitioo- sunbathing, picnicking, shelling?	🔟	2 . (17)	. (18-18)	(20-21)
c.	beach ● ctivitios- playground?		. 2 . (22)		(25-26)
d.	bosting?	🗓	. 2 . (27)		(30-31)
●.	waterskiing?		. 2 . (32)	. (33-34 3-34)	3s-s6 )
f.	Other Activities? (Specify)	1	. 2 . (37)	. <u>(g-39)</u>	(40-41)
	··		. 2 . (62)	. [63-46]	(45-48)
	· ·	🔟	. 2 . (47)	. (8-48)	(50-51)

5. If you (or any members of your family w h o live with you) don't go into the water, which of the following statescribe why? (READ THE FOLLOWING)

	REASON	No (co to next reason)		do not go into the water because (REASON)?  **  SB. How many ch.  & teenagers go into the because (WA
•\	Don't know how to	. 1	. 2 . (52)	(53-5¢) (55-5¢)
b.	No bathhouse facilities at beach	. 🕦	. 2 . (57)	(58-53) (60-62)
e.	Person's health precludes it	. 🕦	. 2 . (62)	(63-66)
d.	You or they believe water is dirty/polluted	. 🔟	. 2 . (87)	(65-63)" " " " (76-72)
				COLS. 72-80 = SITUCASE OTT
●.	Too many jellyfish	. 🗓	. 🚺 . (1)	(2-3)
f.	Other reason (SPECIFY	. 🗓	. 🔁 . ( 8)	<b>P</b> 9-10)

6.	How many years have you (and members of you been coming to the beaches on the Western Sho	-
	Number of years	<u>I I  </u> (12-12)
7.	Have you (or anyone in your family who swimming habits in the Chesapeake because of quality?	
	No	
	Yes (stopped)	
	Yes (started) <b>3</b>	(13)
	A. In what year did you (or members of swimming habits in the Chesapeake be water quality?	
	Year $$	( 14-15)
	The next few guestions deal with the freque family) visit beaches ond the cost related t	

THIS SPACE INTENTIONALLY BLANK

HAND RESPONDENT CARD A.

	<b>A.B.</b> Ct. 1 **	Q.SA. How many trips did you	Q.88. How Nay trips
BEACH VISITED	Q.8. Chock if visited	(and your family) make to (BEACH) in 1983?	(and your famil to (BEACH) in
Saady Point St.	Park <b>m</b> a	0748)	(;
Fort Smallwood .	•••• m a		
Bay Ridge Beach	(mu)		
Herrington Harbo	or		
		$\dots \dots $ $\mathbf{m} \cdot 674)\dots$	
Camp Herrick	2 . (62)		m 1 . G
Breezy Point Bea	ch		$\cdots m$ .
Chesapeake Beach	0 . 2 . (52)	<sub>m</sub> <sub>I</sub> .'(28-ss)	m .
North Beach			$\cdots m$ .
		(62-éj)	
Point Lookout St	Park 2 . (88)		
			COLS . 71-80 = BBSITE/CA
Elm's Beach	<b>2</b> . <b>(J)</b>	$\dots$ ( 24)	
Horgantown Sootl	h		(
Missi Sooth (Bal	timore) 2 . (11)		
Rocky Point Park	<b> m a</b> .		m I - (
Conrad's Ruth Vi	11a 2 . (22)	m   .(2s-23)	(2
Porter New Park	(26)	<b>m</b>	. (2748 •)• 1
Other (SPECIFY)			

A. <b>Wa</b> i	ich of these beaches do You ● ach beach (CHECK (√) EACH B	Don't know	(GO TO 0.10)  ase give me the letter that appears beside FOR EACH BEACH.)
	BEACH	Q.9A. Check if plan to visit	Q.9B. How many trips do you (and your family) intend to take to (BEAC Skis summer?
• \	Sandy Point St. Park		(38-3\$)
b.	Fort Smallwood	up )	(42-42)
c.	Bay Ridge Beach		(44-4s )
d.	Herrington Harbor		$1 \cdot (4?-48)$
●.	Kurts Pleasure Beach	•••• (as)	(60-61)
f.	Camp Herrick	(52)	
8.	Breezy Point Beach		(54-57)
h.	Chesapeake Botch	2 . (58)	(59-60)
1.	North Beach		
j.	Rod and Reel Dock		(65-66)
k.	Point Lookout St. Park		m • W - 49)
1.	Elm's Beach		(72-72)
			COLS. 73-S0 = SITE/CASE
•.	Morgantown Beach		
n.	Hiami Beach (Baltimore)		
0.	Rocky Point Pork		
p.	Conrad's Ruth Villa .		
q.	Porter New Park		(, 24-1s )
r.	Other (SPECIFY)	_	(27-28)

INTERVIEWER NOTE: ASK QUESTIONS 10A-H SEPARATELY FOR EACH BEACH CHECKED IN QUESTIONS 8 AND 9A.

- 10. Now think bout the cost of a typical (family) trip to (BEACH) in 1984.
  - A. What would you say the total ●ntrance fee per day, including parking, would be for you (and your family) ●t (BEACH)? (ENTER AMOUNT IN COLUMN A BESIDE APPROPRIATE BEACHI.
  - B. What is the typical coat for you (and your family) to travel to (BEACH)? (ENTER AMOUNT IN COLUMN B BESIDE APPROPRIATE BEACH NAME).
  - c. How much will it, cost you (and your family) per day in other expenditures such  $\bullet$ s food, hotel or camping fees,  $\bullet$ nd entertainment  $\bullet$ t (w=)? (ENTER AMOUNT IN COLUMN C BESIDE APPROPRIATE BEACH NAME).
  - D. ADD AMOUNTS ENTERED IN COLUMNS A-C AND ENTER TOTAL IN COLUMN D.
  - E. How much travel time does it typically take you (and your family) to make round-trip from your home to (BEWE)? (ENTER TIME IN COLUMN E BESIDE BEACH NAME).
  - F. How many miles is it round-trip from your borne to (BEACH)? (ENTER NUMBER OF MILES II? COLUMN F BESIDE BEACH NAME).
  - G. How much time do you (and your family) typically spend on the beach per day when you visit (BEACH)? PROBE FOR BESTESTIMATE OF THE NUMBER OF HOURS AND ENTER NUMBER IN COLUMN G BESIDE BEACE NAME.
  - H\* What is the *verage* number of days that you nd your family spend on typical trip to (BEACH)? (ENTER **NUMBER** IN COLUMN H BESIDE BEACH **NAME**).

TABLE 1
QUESTION 10
(Continued) .

e Horgantown Beach (2-8) (3-8) (18-17) (18-19) (28-29) (30-23) (31-38) (39-44) (48-46) (47-50) (50-5-7)	Time Da
Park  (1-2) (3-6) (7-22) (12-17) (12-19 (10-23)  1. Ela's Beach  (28-29) (30-33) (34-38) (39-44) (45-46 (47-50)  COLS. 55-7. COLS. 73-80  (Bolt-se) (39-44) (48-461 (47-50)  (28-29) (30-33) (34-38) (39-44) (48-461 (47-50)  COLS. 55-7.	00 I
(28-28) (30-33) (34-38) (39-44) (45-48 (47-50)  Cols. 35-7 (cols. 73-80 (20-28)  a. Hisni Beach (Bolt-se) (39-44) (48-441 (47-50)  Cols. 73-80 (29-28) (39-44) (48-441 (47-50)  Cols. 73-80 (29-28) (39-44) (48-441 (48-441) (48-441 (47-50) (28-28) (39-44) (48-441) (48-441 (47-50) (29-28) (39-44) (48-441) (48-441 (47-50) (48-441 (47-50) (48-441 (47-50) (48-441 (48-441) (48-441 (48-441) (48-441 (48-441) (48-441) (48-441 (48-441) (48-441) (48-441) (48-441 (48-441) (48-481)	(26-25) (26
Horgantown Beach	(52-52) (53
2-2) (3-8) (7-22) (12-27) (12-28) (20-23)  a. Hisni Beach (Bolt-se) (39-44) (45-461 (47-50) (50-53) (39-44) (45-461 (45-461 (47-50) (50-53) (5	= blank = SITE/CASE
(Bolf-se) (30-33) (36-38) (39-66) (48-468 (67-50) COLS. 55-77 COLS. 73-8  0. Rocky Point Park (1-2) (3-6) (20-23)	(26-25) (28
0. Rocky Point Park (3-6) (7-22) (12-27) (18-28) (20-23)	G2-52) G3
(2-2) (3-8) (7-12) (12-17) (18-18) (20-23)	= ank = SITE/CASE
	(26-25) (26
(28-29) (30-33) (34-38) (29-44) (45-48) (47-50)	(51-52) (53
COLS. 55-7: COLS. 73-80	= blank = SITE/CASE
q. Porter New Park (2-2) (3-6) (7-11) (12-17) (18-19) (20-23)	(26-25) (26
23-29) (30-33) (34-38) (39-46) (47-50).	(52-52) (53-

# HAND RESPONDENT CARD B

11.	rank them when deci	ead the water quality characteristics listed on thing of the coording to how important they ore to you (and iding whether or not to visit obeach. Please 1 to 5, with 1 being least important and 5 being most	l your family) rank <b>them on a</b>
		RANK	
	a.	Presence of cloudy water	(55)
	b.	Presence of floating debris or oil	(56)
	c.	Presence of odors	(s7)
	d.	Presence of jellyfish	(58)
	•.	Presence of seaweed ●nd other ● quaticplants	(59)
HAND	RESPONDEN	NT CARD c	
12.	the Chesa	er jellyfish, •lso called sea nettles, • ppearing apeake Bay. Look • t the statements on this card e describes your (and your family's) behavior af	● nd tell me
	•.	Stop going to the beach when jellyfish appear	
	b.	Still go to the beach, but less often 2	(60)
	С.	Continue to 80 to the beach, but don't go into the water	
	d.	Don't consider presence of jellyfish atoll	

COLS. 61-72 = blank COLS. 73-80 = SITE/CASE 12 THIS PAGE INTENTIONALLY BLANK

A. HAND RESPONDENT CARD A. We would like to find out how beach users perceive the water quality, the quality of the beach facilities, the beach quality, • nd crowding • t the beaches on the Chesapeake Bay. Please give me the letter that appears beside the name of • ach beach on this card that you (and your family) • re familiar with. By "familiar," I mean that you know something • bout the beach • ither by having been there or you have heard • bout it through some other source. Please include this beach in the ones that you mention. (CHECK COLUMN A FOR EACH BEACH MENTIONED.)

#### ASK QUESTIONS 13B-E SEPARATELY FOR EACH BEACH MENTIONED.

- B. Do you consider the water quality ●t (BEACE) cceptable or unacceptable for swiming rid/or other water ctivities? (CHECK APPROPRIATE CODE IN COLUMN B BESIDE BEACH NAME).
- C. What about the beach facilities, such ●sspace, bathhouses, tables, swimming guards, etc. ●t (BEACH). Would yourste it ●s cceptable or unacceptable? (CHECK APPROPRIATE CODE IN COLUMN C BESIDE BEACH NAME).
- D. Think bout the beach itself t (BEACH). Do you feel that the quality of the beach is cceptable or unacceptable? (CHECK APPROPRIATE CODE IN COLUMN D BESIDE BEACH NAME).
- Do you feel that the size of the crowd ●t (BEACH) is cceptable or unacceptable? (CHECK APPROPRIATE CODE IN COLUMN E BESIDE BEACH NAME).

TABLE 2
QUESTIONS 13A-E

			A	L.	137/24/22	Booch	Quality	Crı	ing
Beach	Check if	:ceptable	Quality Unacceptable	Beach For ceptable	ilities nacceptable		acceptable		Unacceptable
Sandy Point St. Park	<b>2</b> (2)"	. 🔟	. 2 (2)	1	. 2 (3)	1.	. 2 (4)	. 1	p(s)
Fort Smallwoo	2 (8)"	. 🗓	. 2 (7)	<u> </u>	. [2] (8)	<u> </u>	. 2 (9)	. 1.	. 2 (20
Bay Ridge Beach	<u>2</u> (11)	. 1	. 2 (22)	1	.2 (23)	1.	. 2 (24)	. 🔟 .	. 2(:5
. Herrington Harbor	(16)"	. 🗓 .	. 2 (17)	1	. 2 (18)	. 1	. 2 (29)	. 🗓 .	. 2 (20
Kurtz Pleasur Beach	(21) "	. 💷 .	. 2 (221	1	. 2 (23)	. 🖭 .	. (24)	. 🗓 .	. 2 (2s
. Camp Merrick	(26)	. 🔟 .	. 2 (27)	<u> </u>	. 2 (28)	. 🗓 .	. 2 (w)	. 🖸 .	. 2 (30
Breesy Point	(32)"	. 🖸 .	. 2 (32)	1	(\$3)	. 🖸 .	. <b>3</b> (s4)	. 🗓 .	. 2 (35
Death	(38) "	. 🗓 .	. 2 (37)	. 🗓	🛽 (381	. 🗓 .	.2 (22)	. 🖸 .	. 2 (40
. North Beach	(41) "	. 🗓 .	. 2 (42)	. 🗓	🔁 (42)	. 🗓 .	. 2 (44)	. 💶 .	. 2 (4s
Rod and Reel "tick	2 (48) "	. 🔟 .	. 2 (47)	. 🗓	[3] (48)	. 🕦 .	. 2 (48)	. 🔟 .	. 2 (50
St. Park	·52);2 "	. 🗅 .	. <b>2</b> (s2:	. 🗓	[2] (53)	. 🗓 .	. 2 (s4)	<u>.</u> .	. 2 (ss
Elm's Beach	. (55)"	. 11 .	. 2 (87)	. 🗖	2 (s8;	. 🗓 .	. 2 (59)	. 1	. 2 (60
Beach	· (82)"	. 🖸 .	2 (62	. 🗓	2 (63)	. 1	. 2 (64)	. 1	. 2 (65
i. Hiami Beach (Baltimore)	· 2 66)8 "	. 🔟 .	2 (87	. 🗖	2 (68)	. 🗓 .	. [2] (69)	. 🗓 .	2 (70
		,					COI	\$. 71-80 1	I SITE/CASI
). Rocky Point Park	. 🔁 .	. 🖸 .	2 (2	. 🗓 .	🔁 ( 3	. 🔟 .	. 2 (4)	. 🖸 .	2 ( \$
p. Conrad's Rut	· (2),"	. 1	2 ( 7	. 🔟 .	2 (#	. 🗓 .	. 2 (9)	. 🔟 .	<b>2</b> (3
q. Porter <b>New</b> Park	· (11)"	. 🔟 .	🔁 (22	. 1	2 (13	. 🔟 .	. 2 (16)	. 1	2 (1
r. Other (SPECIFY)	. 2 .	. 1	2 07	. 🔟 .	2 (18	. 🖸 .	. 2 (9)	. 🗆 .	<b>2 6</b> 0

INTERVIEWER CHECKPOINT 1
CHECK THE RESPONSES TO QUESTION 88 FOR THE NUMBER OF TRIPS THE RESPONDENT HAS MADE TO THE SAMPLE SITE IN 1984 AND QUESTION 98 FOR THE NUMBER OF TRIPS THE RESPONDENT PLANS TO TAKE TO THE SAMPLE SITE DURING THE REMINDER OF THIS SUMMER. ADD THE NUMBER ENTERED FOR BOTH QUESTIONS AND RECORD IT HERE. +  TOTAL NUMBER OF 1984 TRIPS =  CHECK COLUMN D IN TABLE 1 FOR THE TOTAL COST OF A TYPICAL 1984 TRIP TO THE
SAMPLE SITE. ENTER THE AMOUNT HERE +
TOTAL COST OF TYPICAL 1984 TRIP\$
INSERT THE TOTAL NUMBER OF 1984 TRIPS AND THE TYPICAL 1984 COST PER TRIP IN THE APPROPRIATE SPACES WHEN QUESTION 14 IS ASKED.
ENTER THE LAST DIGIT OF THE CASE ID NUMBER =
Use \$ amount below in Question 14
0       \$50.00         1       \$45.00         2       : : : : : : : : : : : : : : : : : : :
14. According to your responses to previous questions, you (and your family) take ● bout (TOTAL NUMBER OF 1984 TRIPS) to this site per year ●t an approximate cost of (TOTAL COST OF TYPICAL 1984 TRIP) per day. If your costs per day were to rise by (USE INITIAL AMOUNT FROM TABLE ABOVE), would you still visit this site? Keep in mind that the costs of visiting other sites on the Chesapeake or participating in other ●ctivities would remain the same.
NO
IF NO, DECREASE THE DOLLAR  AMOUNT IN \$5.00 INCREMENTS  UNTIL A "YES" ANSUER IS GIVEN.  WHEN A YES ANSUER IS GIVEN,  RECORD DOLLAR AMOUNT BELOW.  IF YES, INCREASE THE DOLLAR  AMOUNT IN \$5.00 INCREMENTS  UNTIL A "NO" ANSUER IS GIVEN.  WHEN A "NO" ANSUER IS GIVEN,  RECORD DOLLAR AMOUNT OF LAST  "YES" RESPONSE.
14 DOLLARS

	INTERVIEW	ER CHECKPOINT 2	
	ENTER THE LAST DIGIT OF THE CAS	SE ID NUMBER =	
	If last digit is	Use \$ amount belo	
	2	\$15.00 \$20.00 \$25.00 \$30.00 \$35.00	
15.	Jellyfish ●re frequently ident (and your <b>family</b> ) be willing to state or federal taxes if jelly without ●ny ●dverse ecological ●	pay (AMOUNT FROM CP 2) fish could be • lamina	per yeas in ● xtra
	No		
	Yes 02		(26-2?)
	Don't Know m		
	INTERVIE	WER CHECKPOINT 3	
	REFER TO COLUMN B IN TABLE 2 (QUI	ESTIONS 13A-D)	
	WAS THE WATER QUALITY OF THIS SITE	E RATED AS UNACCEPTABLE	?
	No	→ (GO <b>TO Q.17)</b>	
	Yes $lacktriangle$ m	1 " (ASK Q. 16)	(28)
16.	You indicated that the water swiming. Would you be willing or federal taxes if the water of it © cceptable to swim here?	to pay (AMOUNT FROM CP 2	) <b>in</b> extra state
	No		
	Yes	]	
	Don't Know 98	٦	(29-30)

17.	each of t	we questions $\bullet$ re $\bullet$ bout you $\bullet$ nd your household. How manified following types of people live in your household? (REALLOWING AND ENTER THE NUMBER OF EACH TYPE).	
	<b>a</b> .	Adults (age 18 and older) (	32-32)
	ъ.	Children between the ages of 14 and 18	33-\$4)
	c.	Children under ●ge 14	35-35)
18.		<b>D D.</b> Which of the relationships listed on this card bes your <i>status</i> in <b>your</b> household?	t de-
	• .	Grandparent	
	b	Husband	
	С.	Wife	37)
	d.	<b>Child .</b>	
	• .	Other Relative	
	f.	I live $lacktriangle$ lone or with unrelated individuals . ; $\blacksquare$ EJ	
19.		rears have You (and your family) lived in either Maryl or Washington; D.C.?	and,
	Numb	per of years ${f m}$	38-39)
20.	Do you or	r $ullet$ ny other <b>member</b> of your household own (READ <b>THE</b> FOLLO	WING)
		NO YES DK RF	
	• •	●boat?	(40-4:
	b.	• boat trailer? ● c m = m z 1 * • 98 • 97	(42-43
	С.	fishing tackle (rod, reel, tackle box, etc.)?	(44-45
	d.	<pre> •recreational vehicle (RV)?</pre>	(45-47
	e.	• swimming pool? 01 02 . • 98 97	(48-49
	f.	Other recreational items (SPECIFY)	
		01 . 02 98 97	(50-5]
		01 02 98 97	

21.	earner	one of the principal wage <b>earners</b> in your household, •wa but not the <b>principal</b> wage ● arner, •re you •homemaker, or retired?	age , a
	<b>a.</b>	One of the principal wage earners in the family	
	b.	A wage ● arner but not the principal wage ● arner	
	<b>c</b> .	Homemaker	(52)
	d.	Retired	
	e.	Student	
	f.	Other (SPECIFY)	
		••••••	
INTE QUES	RVIEWER N TION 21.	NOTE: ASK QUESTIONS 22 THROUGH 24 IF CODE 1 OR 2 IS MARKED OTHERWISE GO TO QUESTION 26.	IN
22.	How man	ny hours do you usually work per week?	
	Но	urs	53-54)
23.	How man	y paid vacation days will you have to@er in 1984, included by ve Iready taken?	ling
	Vac	eation Days	(5 <b>s-</b> 56)
24.	For you could you	ur typical trip <b>to the</b> beach, if you hadn't gone to the bear have worked •tsome job instead?	each,
	No	• m	(57)
	Yes	• • • • • • • • • • m	,

25.		could have worked. what is the cours of the hours of the hours of the hours of the cours of the		wage <b>mig</b>	ht you have !	been paid
	<b>a.</b>	\$3.35/hour		01		
	b.	\$3.36-\$5.00/hour		02		
	С.	\$5.00-\$7.50/hour		03		
	d.	\$7.50-\$10.00/hour .	•	04		
	• .	\$10.00-\$15.00/hour .		UKI		(58-5S)
	f.	\$15.00-\$20.00/hour .	•	06		
	g.	\$20.00-\$25.00/hour .	•	10		
	h.	Over \$25.00/hour	•	11		
	i.	Don'tKnow		98		
	j٠	Refuse	•	97		
26.	Are there	• ny (other) major wa	ge•arners	in your	family with	you today?
	No.	• E	(00 <b>TO</b>	Q.31)		
	Yes		(ASK Qs	. 27-30)		(60)
The today		questions • re about th	ne other	ajor wage o	arner who is	with you
27.	How many	hours does he/she u	sually work p	er week?		
	Hou	rs	n			(51-?72)
28.	How many p	aid vacation days will he	e/she have	• ltogetl	ner in 1984	?
	Vaca	ation Days				(83-64)
29.		typical trip to the b /she have worked•tsome				the beach,
	No.		]			(65)
	Yes	2	]			, /

30.		could have worked, what hourly rate would he/she have been ally for the hours worked?	n paid
	• \	\$3.35/hour	
	b.	\$3.36-\$5.00/hour	
	С.	\$5.00-\$7.50/hour	
	d.	\$7.50-\$10.00/hour m	
	•.	\$10.00-\$15.00/hour	(66-\$7)
	f.	\$15.00-\$20.00/hour m	
	8.	\$20.00-\$25.00/hour m	
	h.	Over \$25.00/hour	
	i.	Don'tKnow m	
	j.	Refuse	
31.	<ul><li>ppears b</li><li>b</li><li>c</li><li>d</li><li>e</li></ul>	amily's) income during 1984?       Please give me the letter eside the category?	
	Í.	1	
		DK	
		RF	
32.	CODE SEX	BY OBSERVATION.	
	Fem	ale	(?0)
	Male		( . 0)

33.	CODE	RACE BY OBSERVATION.		
		White		
		Black m		(71)
		Oriental		
		Other (SPECIFY)		
			COLS. 72-80 = N SITE/CA	SE 141

Thank you for participating in our survey of besch users. Your responses will be helpful to us  $\bullet$  nd hopefully to the State  $\bullet$  nd Federal governments in determining the status of swimming and other  $\bullet$  ctivities on Chesapeake Bay.

# TELEPHONE CONFIRMATION QUESTIONS

FOR EACH BEACH LISTED ASK 34. A. AND B. BEFORE GOING TO NEXT BEACH.

- 34. A. During 1984 how many times have you (or members of your family who live with you) visited (ENTERED NAME OF BEACH)?

  RECORD ANSWER IN COLUMN A AND ASK:
  - B. During the remainder of 1984 how many times will you (or members of your family who live with You) visit (ENTER NAME OF BEACH)?

    RECORD ANSWER IN COLUMN B AND GOTO NEXT BEACH.

		34.A		34.B PLANNED	
	BEACH	<u>VISITS</u>		VISITS	
• \	Sandy Point St. Park		(1-2) "•		(3-4)
b.	Fort Smallwood		(s-6) ."		(7-8)
C.	Bay Ridge Beach		(9-lo) <b></b>		(11-12)
đ.	Herrington Harbor		(13-14) ••		(25-16)
• .	Kurtz Pleasure Beach		(17-18) .		(19- 20)
f.	Camp Merrick		(21-22) ""		(23-24)
g.	Breezy Point Beach		(25-28) •		(27-28)
h.	Chesapeake Beach		(29-30) • •		(31-32)
i.	North Beach		(33-34)""		(35-36)
j.	Rod ●nd Reel Dock		(37-38)".		(39-40)
k.	Point Lookout St. Park		(41-42) •		(43-44)
1.	Elm'sBeach		(45-46) ••		(47-48)
m.	Morgantown Beach		(49-50)""		(51-s2)
n*	Missi Beach (Baltimore)		(53-54) • "		(55-56)
0.	Rocky Point Park		(57-58) ••	•	(59-60)
<b>P"</b>	Conrad's Ruth Villa		(61-62) · ·		(6S-64)
q.	Porter New Park		(65-66)*.		(67-68)
r.	Other (SPECIFY)		(69-70)		(71-72)

COLS. 73-80 SITE/CASE 15

AFTER PART r SAY: Thank you for taking part in the survey  $\bullet$  nd taking to  $\bullet$  today. The information you-have provided will be very helpful in determining use of the Chesapeake.

# CHESAPEAKE BAY BEACH USE SURVEY TELEPHONE CONFIRMATION SCRIPT AND INTRODUCTION

I am calling to speak with ( INSERT NAHE ). IF NOT THERE, FIND OUT WHEN HE/SHE WILL BE AVAILABLE. WHEN AVAILABLE SAY:

My name is (INSERT NAME) ● nd I'm calling for the University of Maryland. On (INSERT DAY AND DATE you were interviewed ● t (INSERT THE NAME OF THE BEACH WHERE INTERVIEW TOOK PLACE) by ● lady working for the University on ● survey about the Chesapeake Bay. Do you remember that interview? (IF YES PROCEED. IF NO, TRY TO REFRESH THE RESPONDENT'S MEMORY BY TELLING HIM OR HER THE TYPE OF QUESTIONS ASKED. IF STILL NO, TERMINATE THE CALL).

I'm calling today to confirm some of the information you reported the day you were interviewed. I want to know which beaches you have visited or plan to visit on the Western Shore of the Chesapeake Bay. I will read through ● list of beaches ● nd ● sk ● bout each one individually. First,

GO TO QUESTION 34.A.